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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,421	10/28/2003	David J. Napolitano	2002P03647US01	7330

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SIEMENS CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
170 WOOD AVENUE SOUTH  
ISELIN, NJ 08830

EXAMINER

BOR, HELENE CATHERINE

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/696,421

**Applicant(s)**

NAPOLITANO ET AL.

**Examiner**

HELENE BOR

**Art Unit**

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 167-194 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 167-194 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date 01/28/2008  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/29/2008 has been entered.

### ***Claim Objections***

2. Claim 167 & 172-174 objected to because of the following informalities: Claim 167, Line 6 states, "said at least a portion of the frame". The Examiner believes the intention was for the claim to read, "at least a portion of said frame". The claim was interpreted as such to further the prosecution of the case. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 167-169, 171-172, 174-177 & 186-194 are rejected under 35

U.S.C. 102(e) as being anticipated by Seyed-Bolorforosh et al. (US Patent No. 5,891,038).

**Claim 167-169, 172, 174-177 & 185-194:** Seyed-Bolorforosh teaches a method for transmitting a plurality of spatially distinct ultrasonic transmit beams corresponding to a frame in a region (Col. 1, Line 42-43, Col. 11, Line 4-7, Col. 2, Line 14-19 & Col. 10, Line 66-67). Seyed-Bolorforosh teaches cycling through a changing transmit parameter (frequency), wherein the transmit parameter sequence is greater than two (Col. 7, Line 30-44). Seyed-Bolorforosh teaches receiving and combining/summing at least two of the received beams to form a composite signal (Col. 2, Line 26-35 & Col. 3, Line 47-48). Seyed-Bolorforosh teaches wherein the transmit parameter comprises a transmit waveform phase, transmit frequency, transmit gain and transmit aperture (Col. 7, Line 30-44, Figure 2, Element 105, 106 & 108, Claim 13 & Claim 18). Seyed-Bolorforosh teaches the use of B and Doppler imaging mode (Col. 4, Line 36-38).

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claim 173 & 182-184 rejected under 35 U.S.C. 103(a) as being unpatentable over Seyed-Bolorforosh et al. (US Patent No. 5,891,038) as applied to claim 167-169, 171-172, 174-177 & 186-194 above, and further in view of Hwang et al. (US Patent No. 5,706,819).

**Claim 173 & 182 & 184:** Seyed-Bolorforosh teaches a method for transmitting a plurality of spatially distinct ultrasonic transmit beams corresponding to a frame in a region (Col. 1, Line 42-43, Col. 11, Line 4-7, Col. 2, Line 14-19 & Col. 10, Line 66-67). Seyed-Bolorforosh teaches cycling through a changing transmit parameter (frequency), wherein the transmit parameter sequence is greater than two (Col. 7, Line 30-44). Seyed-Bolorforosh teaches receiving and combining/summing at least two of the received beams to form a composite signal (Col. 2, Line 26-35 & Col. 3, Line 47-48). Seyed-Bolorforosh fails to teach the transmit parameter using pulse inversion. However, Hwang teaches using pulse inversion to maximize the sensitivity and minimize the variance (Col. 5, Line 24-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Seyed-Bolorforosh to include the pulse inversion of Hwang in order to maximize the sensitivity and minimize the variance (Col. 5, Line 24-31) of contrast agents (Col. 3, Line 53 – Col. 4, Line 4).

***Allowable Subject Matter***

7. Claim 170 & 178-181 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE BOR whose telephone number is (571)272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./  
Examiner, Art Unit 3768

/Eric F Winakur/  
Primary Examiner, Art Unit 3768